

ABSTRACT (246 words)

Rollers used on conveyors and inside the zinc-pot of a steel-sheet galvanizing line are usually driven by friction between the roller and the belt or sheet. To keep rollers from stalling, the bearing diameter is minimized. The allowable bending stress in the bearing shaft limits its length. Rollers operating in high temperature furnaces or in a hot zinc pot of a steel galvanizing line often have limited or non-existent bearing lubrication. In such cases, bearings of small diameter and limited length result in high contact pressure and short lifetime. Inside a zinc-pot, bearing life often does not exceed one week of operation. Most of these bearings are designed to have a stationary bearing housing with the roller shaft rotating inside. For small diameter rollers such shafts are an integral part of the roller. For cylindrical shell type rollers, short shafts are welded to plugs, which are then welded to each end of the roller.

The herein disclosed "Bearing Life Extender For Conveyor Type Submerged Rollers" utilizes bearings, which are smaller in diameter and longer, without an increase in shaft bending moment! This is made possible by changing from a rotating cantilevered shaft to a stationary shaft strengthened to be substantially non-deflecting on either side of the bearings. Such a stationary shaft can be smaller in diameter to reduce bearing friction torque and stall problems. In addition such a shaft can have increased bearing contact area and assure bearing alignment, all of which contribute to increased bearing life.

(36 claims of which 3 are independent claims, 1 drawing sheet)